

Expert Report: Rounds Fired in Self-Defense, and Outcomes of LCM Usage in Mass Shootings

**Prepared for the Washington State Attorney General's Office by**

Lucy P. Allen

**In the Matter of:**

GABRIELLA SULLIVAN, *et al.*,

Plaintiffs,

v.

BOB FERGUSON, *et al.*,

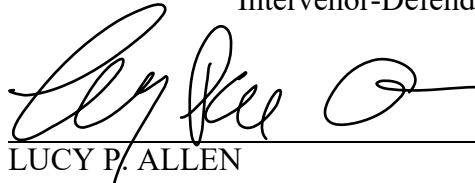
Defendants,

and

ALLIANCE FOR GUN RESPONSIBILITY,

Intervenor-Defendant.

April 28, 2023  
DATE

  
\_\_\_\_\_  
LUCY P. ALLEN

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## **I. SCOPE OF ASSIGNMENT**

I have been asked by the Office of the Attorney General of Washington to address the following issues: (a) the number of rounds of ammunition fired by individuals using a gun in real-life self-defense incidents; and (b) the outcomes when large-capacity magazines (magazines capable of holding more than 10 rounds) are used in public mass shootings, including the associated number of casualties.

## **II. BACKGROUND AND QUALIFICATIONS**

I am a Managing Director of NERA Economic Consulting (“NERA”), a member of NERA’s Securities and Finance Practice and Chair of NERA’s Product Liability and Mass Torts Practice. NERA provides practical economic advice related to highly complex business and legal issues arising from competition, regulation, public policy, strategy, finance, and litigation. NERA was established in 1961 and now employs approximately 500 people in more than 20 offices worldwide.

In my over 25 years at NERA, I have been engaged as an economic consultant or expert witness in numerous projects involving economics and statistics. I have been qualified as an expert and testified in court on various economic and statistical issues relating to the flow of guns into the criminal market. I have testified at trials in Federal and State Courts, before the New York City Council Public Safety Committee, the American Arbitration Association and the Judicial Arbitration Mediation Service, as well as in depositions.

I have an A.B. from Stanford University, an M.B.A. from Yale University, and M.A. and M. Phil. degrees in Economics, also from Yale University. Prior to joining NERA, I was an Economist for both President George H. W. Bush’s and President Bill Clinton’s Council of Economic Advisers. My resume with recent publications and testifying experience is included as Exhibit A.

## **III. SUMMARY OF FINDINGS**

Regarding the number of rounds fired by individuals using a gun in self-defense, I analyzed almost 1,000 real-life incidents of self-defense and found that it is extremely rare for a person,

when using a firearm in self-defense, to fire more than 10 rounds. In particular, I performed an analysis of 736 incidents in the NRA Armed Citizen database, as well as our own systematic analysis of 200 Factiva news stories from a random sample of approximately 4,800 news stories describing incidents of self-defense with a firearm and found only 2 incidents where more than 10 rounds were used.<sup>1</sup>

Regarding the outcomes when large-capacity magazines are used in public mass shootings, I analyzed almost 200 mass shootings from four different sources between 1982 and 2022 and found that: 1) large-capacity magazines are often used in mass shootings; 2) both injuries and fatalities were higher in mass shootings that involved large-capacity magazines than in other mass shootings; 3) it is common for offenders to fire more than 10 rounds when using a large-capacity magazine in mass shootings; and 4) the majority of guns used in mass shootings were obtained legally. These findings are consistent with other studies that have analyzed mass shootings, including studies based on alternate sets of mass shootings, covering different years and defining mass shootings somewhat differently.

#### IV. OPINIONS

##### A. The Number of Rounds Used by Individuals In Self-Defense

Plaintiffs claim that the large-capacity magazines (magazines capable of holding more than 10 rounds) covered by Washington State’s Engrossed Substitute Senate Bill 5078 (“ESSB 5078”), are commonly used for lawful purposes, including for self-defense.<sup>2</sup>

The number of rounds commonly needed by individuals to defend themselves cannot be practically or ethically determined with controlled scientific experiments and there is no source that systematically tracks or maintains data on the number of rounds fired by individuals in self-defense. Due to these limitations, I have analyzed available data sources to estimate the number of

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<sup>1</sup> Note that these two incidents with more than 10 bullets fired by the defender were added to the NRA Armed Citizen database after an earlier analysis that I had conducted of the database in another case. In addition, according to the news stories on these two incidents, the defenders did not appear to need to fire more than 10 shots to defend themselves.

<sup>2</sup> See, for example, First Amended Complaint for Injunctive and Declaratory Relief, filed July 1, 2022, Dkt. #42, (the “Complaint”), ¶1.

rounds fired by individuals to defend themselves. In particular, I have analyzed data from the NRA Institute for Legislative Action, as well as my own study of news reports on incidents of self-defense with a firearm. In all, I have analyzed almost 1,000 incidents of self-defense with a firearm and found that it is extremely rare for a person, when using a firearm in self-defense, to fire more than 10 rounds.

The NRA maintains a database of “Armed Citizen” stories describing private citizens who have successfully defended themselves, or others, using a firearm (“NRA Armed Citizen database”). According to the NRA, the “Armed Citizen” stories “highlight accounts of law-abiding gun owners in America using their Second Amendment rights to defend self, home and family.”<sup>3</sup> Although the methodology used to compile the NRA Armed Citizen database of stories is not explicitly detailed by the NRA, the NRA Armed Citizen database is a useful data source in this matter for at least three reasons. First, the Armed Citizen database was the largest collection of accounts of citizen self-defense compiled by others that I was able to find. Second, the incidents listed in the Armed Citizen database highlight the very conduct that Plaintiffs claim the Washington State law impedes (*i.e.*, the use of firearms by law-abiding citizens for self-defense).<sup>4</sup> Third, the Armed Citizen database is compiled by an entity that actively opposes restrictions on magazine capacity and restrictions on the possession and use of firearms in general.<sup>5</sup> In light of the positions taken by the entity compiling the data, I would expect that any selection bias would be in favor of stories that put use of guns in self-defense in the best possible light and might highlight the apparent need of guns and/or multiple rounds in self-defense incidents.

My team at NERA and I performed an analysis of incidents in the NRA Armed Citizen database that occurred between January 2011 and May 2017.<sup>6</sup> For each incident, the city/county, state, venue (whether the incident occurred on the street, in the home, or elsewhere) and the number

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<sup>3</sup> NRA Institute for Legislative Action, Armed Citizens, <https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017.

<sup>4</sup> See, for example, Complaint, ¶1.

<sup>5</sup> See, for example, NRA Civil Rights Defense Fund website, <http://www.nradefensefund.org/current-litigation.aspx>, accessed October 12, 2018.

<sup>6</sup> My collection and coding of the NRA Armed Citizen stories was last performed in mid-2017.

of shots fired were tabulated.<sup>7</sup> The information was gathered for each incident from both the NRA synopsis and, where available, an additional news story. An additional news story was found for over 95% of the incidents in the NRA Armed Citizen database.

According to this analysis of incidents in the NRA Armed Citizen database, it is extremely rare for a person, when using firearms in self-defense, to fire more than 10 rounds. Out of 736 incidents, there were 2 incidents (0.3% of all incidents), in which the defender was reported to have fired more than 10 bullets.<sup>8</sup> Defenders fired 2.2 shots on average.<sup>9</sup> In 18.2% of incidents, the defender did not fire any shots. These incidents highlight the fact that in many instances defenders are able to defend themselves without firing any shots. For example, according to one of the incidents in the NRA Armed Citizen Database:

“A man entered a Shell station in New Orleans, La. and attempted to rob a cashier, by claiming he was carrying a gun. The cashier responded by retrieving a gun and leveling it at the thief, prompting the criminal to flee. (The Times Picayune, New Orleans, La. 09/02/15)”<sup>10</sup>

For incidents occurring in the home (56% of total), defenders fired an average of 2.1 shots, and fired no shots in 16.1% of incidents. For incidents occurring outside the home (44%) of total,

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<sup>7</sup> The following incidents were excluded from the analysis: (1) duplicate incidents, (2) wild animal attacks, and (3) one incident where the supposed victim later pleaded guilty to covering up a murder. When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the story stated that “shots were fired” this would indicate that at least two shots were fired and thus we used the average number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.

<sup>8</sup> Note that these two incidents with more than 10 bullets fired by the defender were added to the NRA Armed Citizen database in 2016 and 2017 after an earlier analysis that I had conducted of the database had been submitted to and cited by the Court in *Kolbe v. O'Malley*, Case No. CCB-13-2841 (Dkt. 79). In addition, according to the news stories on these two incidents, the defenders did not appear to need to fire more than 10 shots to defend themselves.

<sup>9</sup> Note that the analysis is focused on shots fired when using a gun in self-defense and therefore the average includes instances when no shots are fired. If one calculates the average excluding incidents of self-defense with a gun without firing shots, the average is still low, 2.6 shots when at least one shot is fired.

<sup>10</sup> “Gas station clerk scares off robber,” *NRA-ILA Armed Citizen*, September 9, 2015.

defenders fired an average of 2.2 shots, and fired no shots in 20.9% of incidents.<sup>11</sup> The table below summarizes these findings.

<b>Number of Shots Fired in Self-Defense</b> <b>Based on NRA Armed Citizen Incidents in the United States</b> <b>January 2011 - May 2017</b>			
	Shots Fired by Individual in Self-Defense		
	Overall	Incidents in Home	Outside the Home
Average Number of Shots Fired	2.2	2.1	2.2
Number of Incidents with No Shots Fired	134	66	68
Percent of Incidents with No Shots Fired	18.2%	16.1%	20.9%
Number of Incidents with >10 Shots Fired	2	2	0
Percent of Incidents with >10 Shots Fired	0.3%	0.5%	0.0%
<b>Notes and Sources:</b>			
Data from NRA Armed Citizen database covering 736 incidents (of which 411 were in the home) from January 2011 through May 2017. Excludes duplicate incidents, wild animal attacks and one incident where the supposed victim later pleaded guilty to covering up a murder.			

We also performed the same analysis of the NRA Armed Citizen database limited to incidents that occurred in Washington State. According to this analysis, defenders in Washington State fired 2.1 shots on average. Out of 23 incidents, there were no incidents in which the defender was reported to have fired more than 10 bullets. In 13% of incidents, the defender did not fire any shots, and simply threatened the offender with a gun. For incidents occurring in the home (70% of total), defenders fired an average of 2.1 shots, and fired no shots in 12.5% of incidents. For incidents occurring outside the home (30% of total), defenders fired an average of 1.9 shots and

<sup>11</sup> A separate study of incidents in the NRA Armed Citizen database for an earlier period (the five-year period from 1997 through 2001) found similar results. Specifically, this study found that, on average, 2.2 shots were fired by defenders and that in 28% of incidents of armed citizens defending themselves the individuals fired no shots at all. See, Claude Werner, “The Armed Citizen – A Five Year Analysis,” <https://tacticalprofessor.files.wordpress.com/2014/12/tac-5-year-w-tables.pdf>, accessed January 26, 2023.

fired no shots in 14.3% of incidents. The table below summarizes these findings for Washington State:

<b>Number of Shots Fired in Self-Defense Based on NRA Armed Citizen Incidents in Washington State January 2011 - May 2017</b>			
	Shots Fired by Individual in Self-Defense		
	Overall	Incidents in Home	Outside the Home
Average Number of Shots Fired	2.1	2.1	1.9
Number of Incidents with No Shots Fired	3	2	1
Percent of Incidents with No Shots Fired	13.0%	12.5%	14.3%
Number of Incidents with >10 Shots Fired	0	0	0
Percent of Incidents with >10 Shots Fired	0.0%	0.0%	0.0%
<b>Notes and Sources:</b>			
Data from NRA Armed Citizen database covering 23 incidents in Washington (of which 16 were in the home) from January 2011 through May 2017. Excludes duplicate incidents and wild animal attacks.			

In addition to our analysis of incidents in the NRA Armed Citizen database, we performed a systematic, scientific study of news reports on incidents of self-defense with a firearm in the home, focusing on the same types of incidents as the NRA stories and covering the same time period.<sup>12</sup>

To identify relevant news stories to include in our analysis, we performed a comprehensive search of published news stories using Factiva, an online news reporting service and archive owned by Dow Jones, Inc. that aggregates news content from nearly 33,000 sources.<sup>13</sup> The search was designed to return stories about the types of incidents that are the focus of the NRA Armed Citizen database and that Plaintiffs claim the Washington State law impedes – in particular, the use of

<sup>12</sup> This analysis was initially conducted to research issues regarding self-defense in the home, which was a focus of federal Second Amendment jurisprudence before the 2022 *New York State Rifle & Pistol Association v. Bruen* Supreme Court decision. The analysis of the NRA Armed Citizen incidents described above indicates that the number of shots fired in self-defense outside the home is similar to those inside the home.

<sup>13</sup> Factiva is often used for academic research. For example, a search for the term “Factiva” on Google Scholar yields over 28,000 results. As another example, a search on Westlaw yields at least 83 expert reports that conducted news searches using Factiva.



firearms for self-defense.<sup>14</sup> The search identified all stories that contained the following keywords in the headline or lead paragraph: one or more words from “gun,” “shot,” “shoot,” “fire,” or “arm” (including variations on these keywords, such as “shooting” or “armed”), plus one or more words from “broke in,” “break in,” “broken into,” “breaking into,” “burglar,” “intruder,” or “invader” (including variations on these keywords) and one or more words from “home,” “apartment,” or “property” (including variations on these keywords).<sup>15</sup> The search criteria matched approximately 90% of the NRA stories on self-defense with a firearm in the home, and an analysis of the 10% of stories that are not returned by the search shows that the typical number of shots fired in these incidents was no different than in other incidents. The search covered the same period used in our analysis of incidents in the NRA Armed Citizen database (January 2011 to May 2017). The region for the Factiva search was set to “United States.” The search returned approximately 35,000 stories for the period January 2011 to May 2017.<sup>16</sup>

Using a random number generator, a random sample of 200 stories was selected for each calendar year, yielding 1,400 stories in total.<sup>17</sup> These 1,400 stories were reviewed by me and my team at NERA to identify those stories that were relevant to the analysis, *i.e.*, incidents of self-defense with a firearm in or near the home. This methodology yielded a random selection of 200 news stories describing incidents of self-defense with a firearm in the home out of a population of

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<sup>14</sup> NRA Institute for Legislative Action, Armed Citizens, <https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017. See, also Complaint, ¶1.

<sup>15</sup> The precise search string used was: (gun\* or shot\* or shoot\* or fire\* or arm\*) and (“broke in” or “break in” or “broken into” or “breaking into” or burglar\* or intrud\* or inva\*) and (home\* or “apartment” or “property”). An asterisk denotes a wildcard, meaning the search includes words which have any letters in place of the asterisk. For example, a search for shoot\* would return results including “shoots,” “shooter” and “shooting.” The search excluded duplicate stories classified as “similar” on Factiva.

<sup>16</sup> The effect of using alternative keywords was considered. For example, removing the second category (“broke in” or “break in” or “broken into” or “breaking into” or burglar\* or intrud\* or inva\*) and including incidents in which the assailant was already inside the home and/or was known to the victim was considered. *A priori*, there was no reason to believe that a larger number of shots would be used in these incidents and based on an analysis of the NRA stories we found that the number of shots fired in incidents when defending against someone already in the home was not different than those with an intruder.

<sup>17</sup> The random numbers were generated by sampling with replacement.

approximately 4,800 relevant stories.<sup>18</sup> Thus, out of the over 70 million news stories aggregated by Factiva between January 2011 and May 2017, approximately 4,800 news stories were on incidents of self-defense with a firearm in the home. We analyzed a random selection of 200 of these stories.

For each news story, the city/county, state and number of shots fired were tabulated. When tabulating the number of shots fired, we used the same methodology as we used to analyze stories in the NRA Armed Citizen database.<sup>19</sup> We then identified other stories describing the same incident on Factiva based on the date, location and other identifying information, and recorded the number of times that each incident was covered by Factiva news stories.

To determine the average number of shots fired *per incident*, we first determined the average number of shots fired *per story* and then analyzed the number of stories per incident. According to our study of a random selection from approximately 4,800 relevant stories on Factiva describing incidents of self-defense with a firearm in the home, the average number of shots fired per story was 2.61. This is not a measure of the average shots fired *per incident*, however, because the number of stories covering an incident varies, and the variation is not independent of the number of shots fired. We found that there was a statistically significant relationship between the number of shots fired in an incident and the number of news stories covering an incident.<sup>20</sup> We found that on average the more shots fired in a defensive gun use incident, the greater the number

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<sup>18</sup> The approximately 4,800 relevant news stories were estimated by calculating the proportion of relevant news stories from the 200 randomly selected stories each year and applying that proportion to the number of results returned by the search for each year of the analysis. For example, in 2017, 33 out of 200 (17%) randomly selected news stories involved incidents of self-defense with a firearm in the home. Applying that proportion to the 1,595 results from the Factiva search in 2017 yields 263 relevant news stories in 2017. This process was repeated every year to arrive at a total of 4,841 relevant news stories from 2011-2017.

<sup>19</sup> When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the story stated that “shots were fired” this would indicate that at least two shots were fired and thus we used the average number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.

<sup>20</sup> Based on a linear regression of the number of news stories as a function of the number of shots fired, the results were statistically significant at the 1% level (more stringent than the 5% level commonly used by academics and accepted by courts. See, for example, Freedman, David A., and David H. Kaye, “Reference Guide on Statistics,” *Reference Manual on Scientific Evidence* (Washington, D.C.: The National Academies Press, 3rd ed., 2011), pp. 211-302, and Fisher, Franklin M., “Multiple Regression in Legal Proceedings,” 80 *Columbia Law Review* 702 (1980).)

of stories covering the incident. For example, as shown in the table below, we found that incidents in Factiva news stories with zero shots fired were covered on average by 1.8 news stories, while incidents with six or more shots fired were covered on average by 10.4 different news stories.

<b>Average Number of News Stories by Number of Shots Fired In Factiva Stories on Incidents of Self-Defense with a Firearm January 2011 - May 2017</b>	
<b>Number of Shots Fired By Defender</b>	<b>Average Number of News Stories</b>
0	1.8
1 to 2	2.8
3 to 5	3.8
6 or more	10.4
<b>Notes and Sources:</b> Based on stories describing defensive gun use in a random selection of Factiva stories between 2011 to May 2017 using the search string: (gun* or shot* or shoot* or fire* or arm*) and ("broke in" or "break in" or "broken into" or "breaking into" or burglar* or intrud* or inva*) and (home* or "apartment" or "property"), with region set to "United States" and excluding duplicate stories classified as "similar" on Factiva. Methodology for tabulation of shots fired as per footnote 19.	

After adjusting for this disparity in news coverage, we find that the average number of shots fired per incident covered is 2.34.<sup>21</sup> Note that this adjustment does not take into account the fact that some defensive gun use incidents may not be picked up by *any* news story. Given the observed relationship that there are more news stories when there are more shots fired, one would

<sup>21</sup> The adjustment reflects the probability that a news story on a particular incident would be selected at random from the total population of news stories on incidents of self-defense with a firearm in the home. The formula used for the adjustment is:

$$\frac{\sum_{i=1}^n \left( \text{Shots Fired}_i \times \frac{R_i}{C_i} \right)}{\sum_{i=1}^n \left( \frac{R_i}{C_i} \right)}$$

where:

$n$  = random selection of news stories on incidents of self-defense with a firearm in the home

$R_i$  = number of search results on Factiva in the calendar year of incident  $i$

$C_i$  = number of news stories covering incident  $i$

expect that the incidents that are not written about would on average have fewer shots than those with news stories. Therefore, the expectation is that these results, even after the adjustment, are biased upward (*i.e.*, estimating too high an average number of shots and underestimating the percent of incidents in which no shots were fired).

As shown in the table below, according to the study of Factiva news stories, in 11.6% of incidents the defender did not fire any shots, and simply threatened the offender with a gun. In 97.3% of incidents the defender fired five or fewer shots. There were no incidents where the defender was reported to have fired more than 10 bullets.

**Number of Shots Fired in Self-Defense in the Home  
Based on Random Selection of Articles from Factiva  
January 2011 - May 2017**

	<u>Incidents in the Home</u>
Estimated population of news reports in Factiva on self-defense with a firearm in the home	4,841
Random selection of news reports	200
Average Number of Shots Fired	2.34
Median Number of Shots Fired	2.03
Number of Incidents with No Shots Fired	23
Percent of Incidents with No Shots Fired	11.6%
Number of Incidents with <=5 Shots Fired	195
Percent of Incidents with <=5 Shots Fired	97.3%
Number of Incidents with >10 Shots Fired	0
Percent of Incidents with >10 Shots Fired	0.0%

**Notes and Sources:**

Based on news stories describing defensive gun use in a random selection of Factiva stories 2011 to May 2017 using search string (gun\* or shot\* or shoot\* or fire\* or arm\*) and ("broke in" or "break in" or "broken into" or "breaking into" or burglar\* or intrud\* or inva\*) and (home\* or "apartment" or "property") with region set to United States and excluding duplicate stories classified as "similar."

Calculated using weights reflecting the probability that a news story on a particular incident would be selected at random from the total population of news stories on incidents of self-defense with a firearm in the home.

In sum, an analysis of incidents in the NRA Armed Citizen database, as well as our own study of a random sample from approximately 4,800 news stories describing incidents of self-defense with a firearm, indicates that it is extremely rare for a person, when using a firearm in self-defense, to fire more than 10 rounds. In particular, I have analyzed almost 1,000 incidents of self-

defense (736 incidents from the NRA Armed Citizen database and 200 stories from Factiva) and in only 2 incidents were more than 10 rounds used.<sup>22</sup>

## **B. Public Mass Shootings**

We analyzed the use of large-capacity magazines in public mass shootings using four sources for identifying public mass shootings: Mother Jones,<sup>23</sup> the Citizens Crime Commission of New York City,<sup>24</sup> The Washington Post,<sup>25</sup> and The Violence Project.<sup>26, 27</sup> The analysis focused on public mass shootings because it is my understanding that the state of Washington is concerned about public mass shootings and enacted the challenged law, in part, to address the problem of public mass shootings.<sup>28</sup>

The type of incident considered a mass shooting is generally consistent across the four sources: all four sources consider an event a mass shooting if four or more people were killed in a

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<sup>22</sup> As discussed above, the two incidents with more than 10 shots fired were added to the NRA Armed Citizen database after an earlier analysis that I had conducted of the database in a different case. Moreover, according to the news stories on these two incidents, the defenders did not appear to need to fire more than 10 shots to defend themselves.

<sup>23</sup> “US Mass Shootings, 1982-2022: Data From Mother Jones’ Investigation,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data>.

<sup>24</sup> “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens Crime Commission of New York City, February 2018 update. Additional details on the mass shootings were obtained from an earlier source by the Citizens Crime Commission. “Mass Shooting Incidents in America (1984-2012),” Citizens Crime Commission of New York City, <http://www.nycrimecommission.org/mass-shooting-incidents-america.php>, accessed June 1, 2017.

<sup>25</sup> “The terrible numbers that grow with each mass shooting,” The Washington Post, updated May 12, 2021.

<sup>26</sup> “Mass Shooter Database,” The Violence Project, <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14, 2022.

<sup>27</sup> When I began research in 2013 on mass shootings, I found Mother Jones and Citizens Crime Commission to maintain the most comprehensive lists of relevant mass shootings. More recently, two additional sources, The Washington Post and The Violence Project, have compiled lists of public mass shootings. The Violence Project began work on its mass shootings database in September 2017 and its database first went online in November 2019, while The Washington Post first published its mass shootings database on February 14, 2018. There is substantial overlap between the mass shootings in all four sources. For example, the Mother Jones data contains 93% of the mass shootings in the Citizens Crime Commission data for the years covered by both data sources, 1984 to 2016, while The Washington Post contains 94% of the mass shootings in The Violence Project data for the years covered by both data sources, 1966 to 2019.

<sup>28</sup> See, for example, Washington State’s ESSB 5078, Section 1, which states: “Large capacity magazines have been used in all 10 of the deadliest mass shootings since 2009, and mass shooting events from 2009 to 2018 where the use of large capacity magazines caused twice as many deaths and 14 times as many injuries... Based on this evidence, and on studies showing that mass shooting fatalities declined during the 10-year period when the federal assault weapon and large capacity magazine ban was in effect, the legislature finds that restricting the sale, manufacture, and distribution of large capacity magazines is likely to reduce gun deaths and injuries.”

public place in one incident, excluding incidents involving other criminal activity such as a robbery.<sup>29</sup>

Each of the four sources contains data on mass shootings covering different time periods. The Mother Jones data covers 112 mass shootings from 1982 to October 13, 2022,<sup>30</sup> the Citizens Crime Commission data covers 80 mass shootings from 1984 to February 2018,<sup>31</sup> The Washington

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<sup>29</sup> Citizen Crime Commission describes a mass shooting as “four or more victims killed” in “a public place” who were “unrelated to another crime (e.g., robbery, domestic violence).” Citizen Crime Commission notes that its sources include “news reports and lists created by government entities and advocacy groups.” “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens Crime Commission of New York City, February 2018 update.

Mother Jones describes mass shootings as “indiscriminate rampages in public places resulting in four or more victims killed by the attacker,” excluding “shootings stemming from more conventionally motivated crimes such as armed robbery or gang violence.” Although in January 2013 Mother Jones changed its definition of mass shooting to include instances when three or more people were killed, for this declaration we only analyzed mass shootings where four or more were killed to be consistent with the definition of the other three sources. “A Guide to Mass Shootings in America,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/07/mass-shootings-map>. See also “What Exactly is a Mass Shooting,” Mother Jones, August 24, 2012, <http://www.motherjones.com/mojo/2012/08/what-is-a-mass-shooting>.

The Washington Post describes a mass shooting as “four or more people were killed, usually by a lone shooter” excluding “shootings tied to robberies that went awry” and “domestic shootings that took place exclusively in private homes.” The Washington Post notes that its sources include “Grant Duwe, author of ‘Mass Murder in the United States: A History,’ Mother Jones and Washington Post research,” as well as “Violence Policy Center, Gun Violence Archive; FBI 2014 Study of Active Shooter Incidents; published reports.” “The terrible numbers that grow with each mass shooting,” The Washington Post, updated May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

The Violence Project indicates that it uses the Congressional Research Service definition of a mass shooting: “a multiple homicide incident in which four or more victims are murdered with firearms—not including the offender(s)—within one event, and at least some of the murders occurred in a public location or locations in close geographical proximity (e.g., a workplace, school, restaurant, or other public settings), and the murders are not attributable to any other underlying criminal activity or commonplace circumstance (armed robbery, criminal competition, insurance fraud, argument, or romantic triangle).” The Violence Project notes that its sources include “Primary Sources: Written journals / manifestos / suicide notes etc., Social media and blog posts, Audio and video recordings, Interview transcripts, Personal correspondence with perpetrators” as well as “Secondary Sources (all publicly available): Media (television, newspapers, magazines), Documentary films, Biographies, Monographs, Peer-reviewed journal articles, Court transcripts, Law Enforcement records, Medical records, School records, Autopsy reports.” “Mass Shooter Database,” The Violence Project, <https://www.theviolenceproject.org/methodology/>, accessed January 17, 2020.

<sup>30</sup> “A Guide to Mass Shootings in America,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/07/mass-shootings-map>. Excludes mass shootings where only three people were killed. Note this analysis of the Mother Jones data may not match other analyses because Mother Jones periodically updates its historical data.

<sup>31</sup> “Mayhem Multiplied: Mass Shooters and Assault Weapons,” *Citizens Crime Commission of New York City*, February 2018 update.



Post data covers 185 mass shootings from 1966 to May 12, 2021,<sup>32</sup> and The Violence Project data covers 182 mass shootings from 1966 to May 14, 2022.<sup>33, 34</sup>

Note that the two more recently compiled sources of mass shootings, The Washington Post and The Violence Project, include additional mass shootings that were not covered by either Mother Jones or Citizens Crime Commission. In general, we found that these additional mass shootings were less covered by the media and involved fewer fatalities and/or injuries than the ones previously identified by Mother Jones or Citizens Crime Commission. For example, using the mass shooting data for the period 1982 through 2019, we found that the median number of news stories for a mass shooting included in Mother Jones and/or Citizen Crime Commission was 317, while the median for the additional mass shootings identified in The Washington Post and/or The Violence Project was 28.<sup>35</sup> In addition, using the mass shooting data through 2019, we found an average of 21 fatalities or injuries for a mass shooting included in Mother Jones and/or Citizen Crime Commission, while only 6 fatalities or injuries for the additional mass shootings identified in The Washington Post and/or The Violence Project.

We combined the data from the four sources for the period 1982 through October 2022, and searched news stories on each mass shooting to obtain additional details on the types of

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<sup>32</sup> “The terrible numbers that grow with each mass shooting,” *The Washington Post*, updated May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

<sup>33</sup> “Mass Shooter Database,” *The Violence Project* <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14, 2022.

<sup>34</sup> Note that I have updated this mass shooting analysis to include more recent incidents, as well as more recently available details. In my 2017 declaration in *Duncan v. Bonta*, I included data on mass shootings through April 2017. In my 2018 declaration in *Rupp v. Becerra*, I updated the analysis to include data on mass shootings through September 2018. The analyses in both of these declarations included mass shootings only from Mother Jones and the Citizen Crime Commission. In my 2020 declaration in *Miller v. Becerra*, I updated the analysis to include mass shootings through December 2019 and added mass shootings from two more sources, The Washington Post and the Violence Project. The number of mass shootings, as well as some details about the shootings, are not identical across these declarations for three main reasons. First, I have updated the analysis to include more recent incidents as well as more recently available details. Second, starting in 2020, I added two more sources (The Washington Post and The Violence Project), which include additional mass shootings and details not included in the initial sources. Third, even though Mother Jones included instances when three or more people were killed, for my declarations and reports starting in 2020, I only included mass shootings where four or more were killed to be consistent with the definition of the other three sources.

<sup>35</sup> The search was conducted over all published news stories on Factiva. The search was based on the shooter’s name and the location of the incident over the period from one week prior to three months following each mass shooting.



weapons used and data on shots fired where available. We identified, based on this publicly available information, which mass shootings involved the use of large-capacity magazines. See attached Exhibit B for a summary of the combined data on mass shootings based on Mother Jones, Citizens Crime Commission, The Washington Post, The Violence Project, and news reports.<sup>36</sup>

### **1. The use of large-capacity magazines in public mass shootings**

Based on the 179 mass shootings through October 2022, we found that large-capacity magazines (those with a capacity to hold more than 10 rounds of ammunition) are often used in public mass shootings. Magazine capacity is known in 115 out of the 179 mass shootings (or 64%) considered in this analysis. Out of the 115 mass shootings with known magazine capacity, 73 (or 63%) involved large-capacity magazines. Even assuming the mass shootings with unknown magazine capacity *all* did not involve large-capacity magazines, 73 out of 179 mass shootings or 41% of mass shootings involved large-capacity magazines.

### **2. Casualties in mass shootings involving large-capacity magazines**

Based on our analysis, casualties were higher in the mass shootings that involved weapons with large-capacity magazines than in other mass shootings. In particular, we found that the average number of fatalities or injuries per mass shooting with a large-capacity magazine was 25 versus 9 for mass shootings where a large-capacity magazine was not used. Focusing on just

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<sup>36</sup> Note that the Citizens Crime Commission data was last updated in February 2018 and The Washington Post was last updated in May 2021.

fatalities, we found that the average number of fatalities per mass shooting with a large-capacity magazine was 10 versus 6 for those without. (See table below.)

<b>Numbers of Fatalities and Injuries in Public Mass Shootings 1982 - October 2022</b>				
Weapon Used	# of Incidents	Average # of		
		Fatalities	Injuries	Total
Large-Cap. Mag.	73	10	16	25
No Large-Cap. Mag.	42	6	3	9
Unknown	64	5	3	7

**Notes and Sources:**  
Casualty figures exclude the shooter. Large-capacity magazine classification and casualties updated based on review of stories from Factiva/Google searches.

Our results are consistent with those of other studies that have analyzed mass shootings. Note that although the other studies are based on alternate sets of mass shootings, including covering different years and defining mass shootings somewhat differently, the results are similar in finding that the numbers of fatalities and injuries are greater in mass shootings in which large-capacity magazines are involved. A 2019 academic article published in the *American Journal of Public Health* by Klarevas et al. found that “[a]ttacks involving LCMs resulted in a 62% higher mean average death toll.”<sup>37</sup> This study found an average number of fatalities of 11.8 per mass shooting with a large-capacity magazine versus 7.3 for those without. The results in this study were based on 69 mass shootings between 1990 and 2017.<sup>38</sup> An analysis of the mass shootings detailed in a 2016 article by Gary Kleck yielded similar results: 21 average fatalities or injuries in mass shootings involving large-capacity magazines versus 8 for those without.<sup>39</sup> The Kleck study

<sup>37</sup> Louis Klarevas, Andrew Conner, and David Hemenway, “The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990–2017,” *American Journal of Public Health* (2019).

<sup>38</sup> The Klarevas et al. study defines mass shootings as “intentional crimes of gun violence with six or more victims shot to death, not including the perpetrators” and, unlike my analysis, does not exclude incidents in private places or incidents involving other criminal activity such as robbery.

<sup>39</sup> Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016).

covered 88 mass shooting incidents between 1994 and 2013.<sup>40</sup> In a 2018 study, Koper et al. found that mass shootings involving assault weapons and large-capacity magazines resulted in an average of 13.7 victims versus 5.2 for other cases.<sup>41</sup> The Koper et al. study covered 145 mass shootings between 2009 and 2015.<sup>42</sup> The table below summarizes their results.

Comparison of Studies on the Use of Large-Capacity Magazines in Mass Shootings						
Source	Criteria		Time Period	# of Incidents	Avg. # of Fatalities + Injuries / Fatalities	
	# Victims	Other Criteria			With LCM	Without LCM
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Allen (2023) <sup>1</sup>	at least 4	Includes shootings "in a public place in one incident, and exclude[s] incidents involving other criminal activity such as a robbery"	1982-October 2022	179	25 / 10	9 / 6
Allen (2020) <sup>2</sup>	<u>killed</u> <sup>3</sup>		1982-2019	161	27 / 10	9 / 6
Kleck et al. (2016) <sup>4</sup>	more than 6 <u>shot</u>	Excludes "spree shootings" and includes shootings in both "public" and "private" places	1994-2013	88	21 / n/a	8 / n/a
Klarevas et al. (2019) <sup>5</sup>	at least 6 <u>killed</u> <sup>3</sup>	Includes "intentional crimes of gun violence"	1990-2017	69	n/a / 12	n/a / 7
Koper et al. (2018) <sup>6</sup>	at least 4 <u>killed</u> <sup>3</sup>	Includes shootings in both public and private places	2009-2015	145	14 / n/a	5 / n/a
<b>Notes and Sources:</b>						
<sup>1</sup> Exhibit B of this Declaration.						
<sup>2</sup> Declaration of Lucy P. Allen in Support of Defendants' Opposition to Motion for Preliminary Injunction in <i>James Miller et al. v. Xavier Becerra et al.</i> , dated January 23, 2020.						
<sup>3</sup> Excluding shooter.						
<sup>4</sup> Kleck, Gary, "Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages," 17 <i>Justice Research and Policy</i> 28 (2016).						
<sup>5</sup> Klarevas et al., "The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings 1990-2017," <i>American Journal of Public Health</i> (2019).						
<sup>6</sup> Koper et al., "Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources," <i>Journal of Urban Health</i> (2018). Note that the Koper et al study includes shootings involving both LCM and assault weapons.						

<sup>40</sup> The Kleck study defines a mass shooting as "one in which more than six people were shot, either fatally or nonfatally, in a single incident." See, Kleck, Gary, "Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages," 17 *Justice Research and Policy* 28 (2016).

<sup>41</sup> Koper et al., "Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources," *Journal of Urban Health* (2018).

<sup>42</sup> The Koper et al. study defined mass shootings as "incidents in which four or more people were murdered with a firearm, not including the death of the shooter if applicable and irrespective of the number of additional victims shot but not killed."

**3. The number of rounds fired in public mass shootings with large-capacity magazines**

The data on public mass shootings indicates that it is common for offenders to fire more than 10 rounds when using a gun with a large-capacity magazine in mass shootings. Of the 73 mass shootings that are known to have involved a large-capacity magazine, there are 49 in which the number of shots fired is known. Shooters fired more than 10 rounds in 46 of the 49 (or 94%) incidents, and the average number of shots fired was 99.

**4. The percent of mass shooters' guns legally obtained**

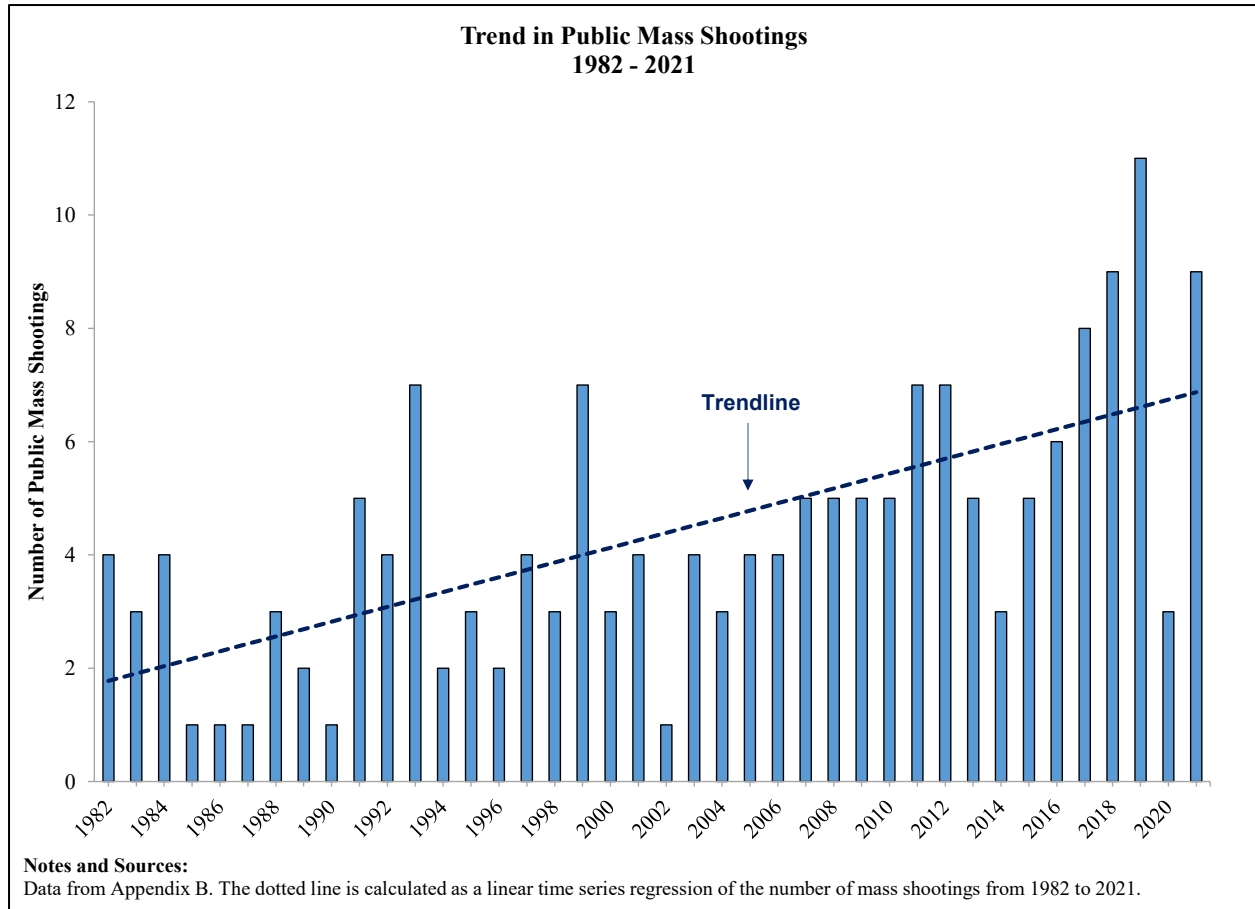
The data on public mass shootings indicates that the majority of guns used in these mass shootings were obtained legally.<sup>43</sup> Of the 179 mass shootings analyzed through October 2022, there are 112 where it can be determined whether the gun was obtained legally. According to the data, shooters in 79% of mass shootings obtained their guns legally (89 of the 112 mass shootings) and 80% of the guns used in these 112 mass shootings were obtained legally (202 of the 252 guns). (Even if one assumed that the guns were illegally obtained in all of the mass shootings where this question of legality is unknown, then one would find that in 50% of the mass shootings the guns were obtained legally and that 62% of the guns themselves were obtained legally.)

**5. Trends in the number of mass shootings**

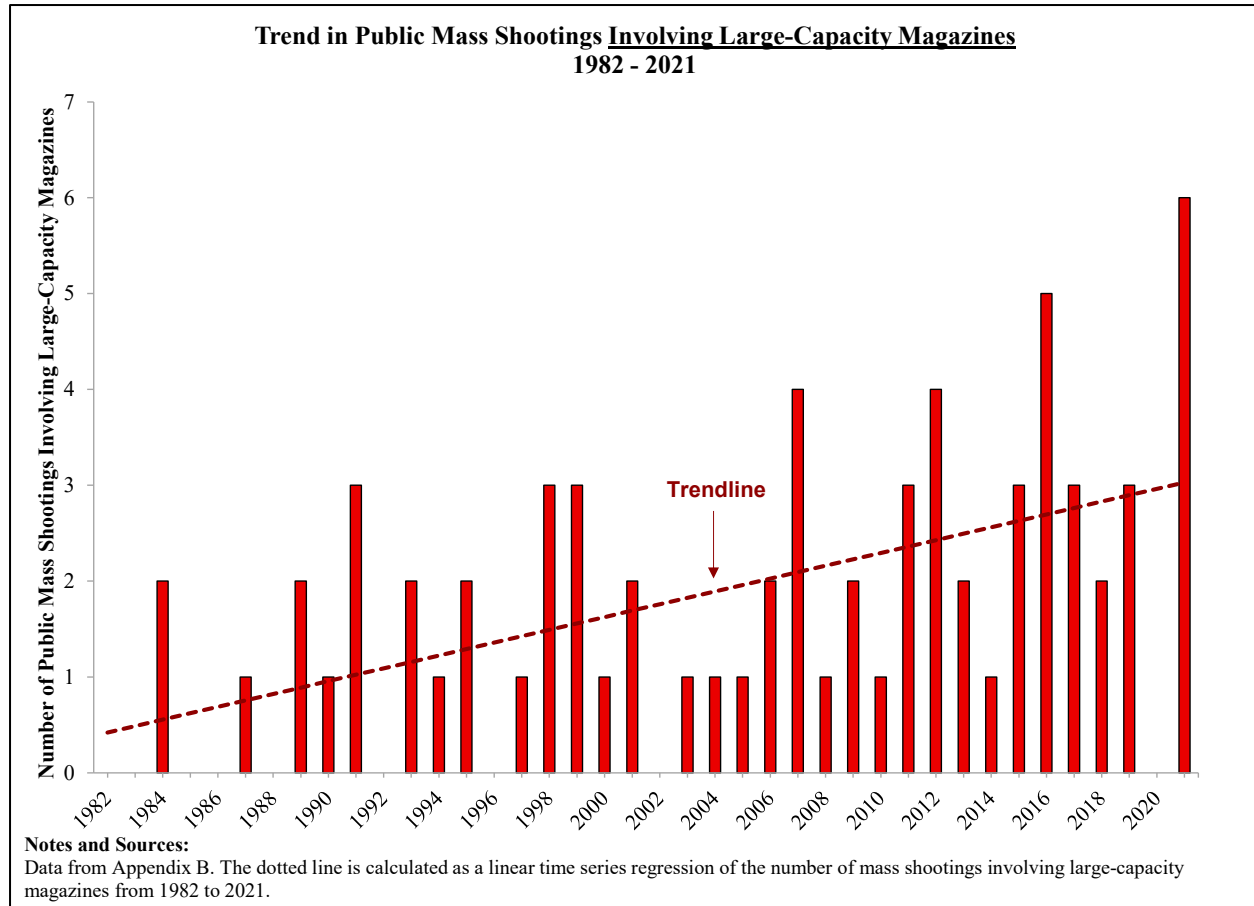
According to the data since 1982, the first year in our analysis, the number of public mass shootings per year has been increasing. The following chart shows the number of mass shootings per year during this period, along with a fitted trendline:

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<sup>43</sup> The determination of whether guns were obtained legally is based on Mother Jones and The Washington Post reporting.



Focusing only on public mass shootings involving large-capacity magazines, the data similarly shows that the number of public mass shootings with large-capacity magazines has been increasing. The following chart shows the number of public mass shootings involving large-capacity magazines per year, along with a fitted trendline:



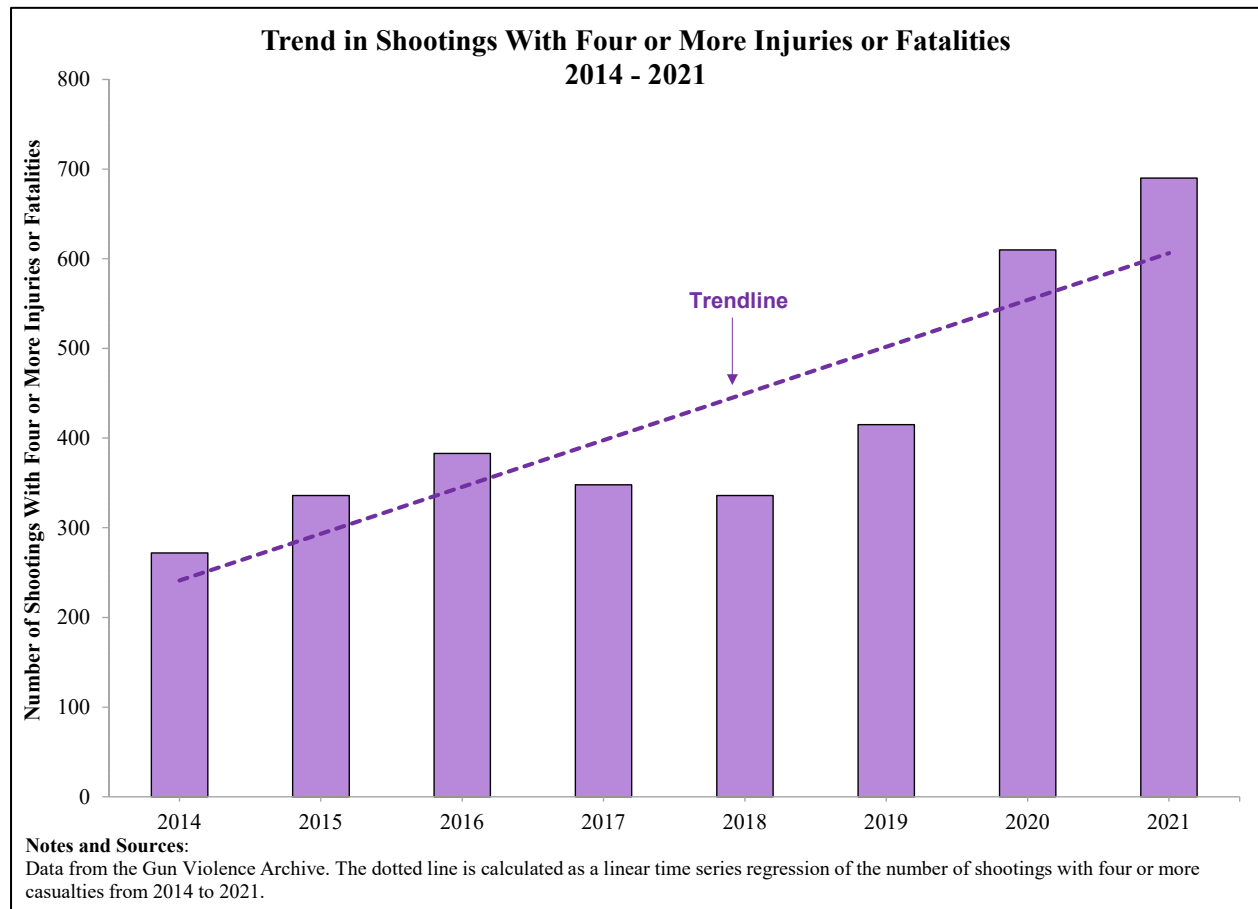
Focusing on a broader set of shooting incidents also shows an upward trend over time. In particular, data from the Gun Violence Archive (“GVA”) on shootings in which four or more victims were killed *or injured* in either a public place *or a home* shows that the number of shooting incidents within this broader category has also been increasing.<sup>44</sup> GVA maintains a “database of incidents of gun violence and gun crime,” based on information from “police, media, data aggregates, government and other sources” and has data starting in 2014.<sup>45</sup> Note that the data indicates there is less news coverage for this broader set of shooting incidents versus public mass shootings and thus less information about the type of magazine used.<sup>46</sup> The following chart shows

<sup>44</sup> “General Methodology,” *Gun Violence Archive Website*, accessed on April 19, 2023.

<sup>45</sup> “General Methodology,” *Gun Violence Archive Website*, accessed on April 19, 2023.

<sup>46</sup> Analysis of the number of news stories covering shootings indicated that there is more news coverage on public mass shootings than mass shootings in the home. For example, our analysis indicated that the median number of news stories covering public mass shootings is approximately four times larger than for mass shootings in the home. See “Declaration of Lucy P. Allen,” dated February 6, 2023, in *Oregon Firearms Federation, Inc., et al., v. Tina Kotek*,

the number of shootings with four or more fatalities or injuries per year according to the GVA data, along with a fitted trendline:



*et al.* In addition, the data indicates that when fatalities and/or casualties are higher there is more news coverage. For example, our analysis indicates that there are approximately four times more news stories covering mass shootings with six or more fatalities than those with fewer than six fatalities.



## Exhibit A

**Lucy P. Allen**  
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### **LUCY P. ALLEN MANAGING DIRECTOR**

#### **Education**

##### **YALE UNIVERSITY**

M.Phil., Economics, 1990

M.A., Economics, 1989

M.B.A., 1986

##### **STANFORD UNIVERSITY**

A.B., Human Biology, 1981

#### **Professional Experience**

1994-Present

##### **National Economic Research Associates, Inc.**

Managing Director. Responsible for economic analysis in the areas of securities, finance and environmental and tort economics.

Senior Vice President (2003-2016).

Vice President (1999-2003).

Senior Consultant (1994-1999).

1992-1993

##### **Council of Economic Advisers, Executive Office of the President**

Staff Economist. Provided economic analysis on regulatory and health care issues to Council Members and interagency groups. Shared responsibility for regulation and health care chapters of the *Economic Report of the President, 1993*. Working Group member of the President's National Health Care Reform Task Force.

1986-1988

1983-1984

##### **Ayers, Whitmore & Company (General Management Consultants)**

Senior Associate. Formulated marketing, organization, and overall business strategies including:

Plan to improve profitability of chemical process equipment manufacturer.

Merger analysis and integration plan of two equipment manufacturers.

Evaluation of Korean competition to a U.S. manufacturer.

Diagnostic survey for auto parts manufacturer on growth obstacles.



Marketing plan to increase international market share for major accounting firm.

Summer 1985

**WNET/Channel Thirteen, Strategic Planning Department**

Associate. Assisted in development of company's first long-term strategic plan. Analyzed relationship between programming and viewer support.

1981-1983

**Arthur Andersen & Company**

Consultant. Designed, programmed and installed management information systems. Participated in redesign/conversion of New York State's accounting system. Developed municipal bond fund management system, successfully marketed to brokers. Participated in President's Private Sector Survey on Cost Control (Grace Commission). Designed customized tracking and accounting system for shipping company.

**Teaching**

1989- 1992

**Teaching Fellow, Yale University**

Honors Econometrics

Intermediate Microeconomics

Competitive Strategies

Probability and Game Theory

Marketing Strategy

Economic Analysis

**Publications**

"Snapshot of Recent Trends in Asbestos Litigation: 2022 Update," (co-author), NERA Report, 2022.

"Snapshot of Recent Trends in Asbestos Litigation: 2021 Update," (co-author), NERA Report, 2021.

"The Short-Term Effect of Goodwill Impairment Announcements on Companies' Stock Prices" (co-author), *International Journal of Business, Accounting and Finance*, Volume 14, Number 2, Fall 2020.

"Snapshot of Recent Trends in Asbestos Litigation: 2020 Update," (co-author), NERA Report, 2020.

"Snapshot of Recent Trends in Asbestos Litigation: 2019 Update," (co-author), NERA Report, 2019.

"Snapshot of Recent Trends in Asbestos Litigation: 2018 Update," (co-author), NERA Report, 2018.

“Trends and the Economic Effect of Asbestos Bans and Decline in Asbestos Consumption and Production Worldwide,” (co-author), *International Journal of Environmental Research and Public Health*, 15(3), 531, 2018.

“Snapshot of Recent Trends in Asbestos Litigation: 2017 Update,” (co-author), NERA Report, 2017.

“Asbestos: Economic Assessment of Bans and Declining Production and Consumption,” World Health Organization, 2017.

“Snapshot of Recent Trends in Asbestos Litigation: 2016 Update,” (co-author), NERA Report, 2016.

“Snapshot of Recent Trends in Asbestos Litigation: 2015 Update,” (co-author), NERA Report, 2015.

“Snapshot of Recent Trends in Asbestos Litigation: 2014 Update,” (co-author), NERA Report, 2014.

“Snapshot of Recent Trends in Asbestos Litigation: 2013 Update,” (co-author), NERA Report, 2013.

“Asbestos Payments per Resolved Claim Increased 75% in the Past Year – Is This Increase as Dramatic as it Sounds? Snapshot of Recent Trends in Asbestos Litigation: 2012 Update,” (co-author), NERA Report, 2012.

“Snapshot of Recent Trends in Asbestos Litigation: 2011 Update,” (co-author), NERA White Paper, 2011.

“Snapshot of Recent Trends in Asbestos Litigation: 2010 Update,” (co-author), NERA White Paper, 2010.

“Settlement Trends and Tactics” presented at Securities Litigation During the Financial Crisis: Current Development & Strategies, hosted by the New York City Bar, New York, New York, 2009.

“Snapshot of Recent Trends in Asbestos Litigation,” (co-author), NERA White Paper, 2009.

“China Product Recalls: What’s at Stake and What’s Next,” (co-author), NERA Working Paper, 2008.

“Forecasting Product Liability by Understanding the Driving Forces,” (co-author), *The International Comparative Legal Guide to Product Liability*, 2006.

“Securities Litigation Reform: Problems and Progress,” *Viewpoint*, November 1999, Issue No. 2 (co-authored).

“Trends in Securities Litigation and the Impact of the PSLRA,” Class Actions & Derivative Suits, American Bar Association Litigation Section, Vol. 9, No. 3, Summer 1999 (co-authored).

“Random Taxes, Random Claims,” Regulation, Winter 1997, pp. 6-7 (co-authored).

## Depositions & Testimony (4 years)

Deposition Testimony before the United States District Court for the Southern District of Texas in *Delaware County Employees Retirement System v. Cabot Oil & Gas Corporation, et al.*, 2023

Deposition Testimony before the United States District Court for the District of Oregon in *Oregon Firearms Federation, Inc. et al. v. Tina Kotek et al.*, 2023.

Depositions before the United States District Court for the Southern District of Texas, Houston Division in *Miriam Edwards, et al. v. McDermott International, Inc., et al.*, 2023.

Deposition Testimony before the United States District Court for the District of Harris County, Texas in *Boxer Property Management Corp. et al. v. Illinois Union Ins. Co. et al.*, 2022.

Trial Testimony before the Supreme Court of the State of New York, County of New York, in *MUFG Union Bank, N.A. (f/k/a Union Bank, N.A.) v. Axos Bank (f/k/a Bank of Internet USA), et al.*, 2022.

Deposition Testimony before the United States District Court for the Eastern District of Virginia, in *Plymouth County Retirement System, et al. v. Evolent Health, Inc., et al.*, 2022.

Deposition Testimony before the United States District Court for the Northern District of Georgia, in *Public Employees' Retirement System of Mississippi v. Mohawk Industries, Inc., et al.*, 2022.

Deposition Testimony before the United States District Court for the Southern District of New York, in *SEC v. AT&T, Inc. et al.*, 2022.

Deposition Testimony before the Superior Court of New Jersey, Hudson County, in *Oklahoma Firefighters Pension and Retirement System vs. Newell Brands Inc., et al.*, 2022.

Deposition Testimony before the United States District Court for the District of Pennsylvania, in *Allegheny County Employees, et al. v. Energy Transfer LP., et al.*, 2022.

Deposition Testimony before the United States District Court, District of Tennessee, in *St. Clair County Employees' Retirement System v. Smith & Acadia Healthcare Company, Inc., et al.*, 2022.

Deposition Testimony before the United States District Court, District of Colorado, in *Cipriano Correa, et al. v. Liberty Oilfield Services Inc., et al.*, 2022.

Deposition Testimony before the Superior Court of New Jersey, Hudson County, in *Oklahoma Firefighters Pension and Retirement System vs. Newell Brands Inc., et al.*, 2021.

Deposition Testimony before the Superior Court of New Jersey, Middlesex County, in *Dana Transport, Inc. et al., vs. PNC Bank et al.*, 2021.

Deposition Testimony before the United States District Court, Western District of North Carolina, in *Cheyenne Jones and Sara J. Gast v. Coca-Cola Consolidated Inc., et al.*, 2021.

Testimony and Deposition Testimony before the Court of Chancery of the State of Delaware in *Bardy Diagnostics Inc. v. Hill-Rom, Inc. et al.*, 2021.

Deposition Testimony before the United States Bankruptcy Court, Southern District of Texas, Houston Division, in *Natixis Funding Corporation v. Genon Mid-Atlantic, LLC*, 2021.

Testimony and Deposition Testimony before the United States District Court, Southern District of California, in *Miller et al. v. Becerra et al.*, 2021.

Deposition Testimony before the Court of Chancery of the State of Delaware in *Arkansas Teacher Retirement System v. Alon USA Energy, Inc., et al.*, 2021.

Deposition Testimony before the United States District Court, Western District of Oklahoma, in *Kathleen J. Myers v. Administrative Committee, Seventy Seven Energy, Inc. Retirement & Savings Plan, et al.*, 2020.

Deposition Testimony before the United States District Court, Middle District of Tennessee, in *Nikki Bollinger Grae v. Corrections Corporation of America, et al.*, 2020.

Deposition Testimony before the Supreme Court of the State of New York, County of New York, in *MUFG Union Bank, N.A. (f/k/a Union Bank, N.A.) v. Axos Bank (f/k/a Bank of Internet USA), et al.*, 2020.

Deposition Testimony before the United States District Court, Western District of Washington at Seattle, in *In re Zillow Group, Inc. Securities Litigation*, 2020.

Lucy P. Allen

Deposition Testimony before the United States District Court, Middle District of Tennessee, in *Zwick Partners LP and Aparna Rao v. Quorum Health Corporation*, 2019.

Testimony and Declaration before the United States District Court, Southern District of Iowa, in *Mahaska Bottling Company, Inc., et al. v. PepsiCo, Inc. and Bottling Group, LLC*, 2019.

Testimony before the United States District Court, Southern District of New York, in *Chicago Bridge & Iron Company N.V. Securities Litigation*, 2019.

Deposition Testimony before the United States District Court, Middle District of Florida, in *Jacob J. Beckel v. Fagron Holdings USA, LLC et al.*, 2019.

**Exhibit B**  
**Public Mass Shootings Data**  
**1982 – Oct. 2022**

Case and Location	Date	Source	Large Capacity Mag.? <sup>a</sup>	Fatalities <sup>b</sup>	Injuries <sup>c</sup>	Total Fatalities & Injuries <sup>c</sup>	Shots Fired <sup>d</sup>	Gun(s) Obtained Legally? <sup>e</sup>	Offender(s) <sup>f</sup> Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Raleigh spree shooting Heddingham, NC	10/13/22	MJ	-	5	2	7	-	-	2
2. Highland Park July 4 parade shooting Highland Park, IL	7/4/22	MJ	Yes	7	48	55	83 <sup>ba</sup>	Yes	1
3. Tulsa medical center shooting Tulsa, OK	6/1/22	MJ	-	4	9 <sup>bb</sup>	13 <sup>bb</sup>	37 <sup>bc</sup>	Yes	2
4. Robb Elementary School massacre Uvalde, TX	5/24/22	MJ	Yes	21	17	38	164 <sup>bd</sup>	Yes	1 <sup>be</sup>
5. Buffalo supermarket massacre Buffalo, NY	5/14/22	MJ/VP	Yes	10	3	13	60 <sup>bf</sup>	Yes	1
6. Sacramento County church shooting Sacramento, CA	2/28/22	MJ	Yes	4	0	4	-	Yes <sup>bg</sup>	1
7. Oxford High School shooting Oxford, MI	11/30/21	MJ/VP	Yes	4	7	11	30 <sup>bh</sup>	Yes <sup>bi</sup>	1
8. San Jose VTA shooting San Jose, CA	5/26/21	MJ/VP	Yes	9	0	9	39 <sup>bj</sup>	Yes <sup>bk</sup>	3
9. Canterbury Mobile Home Park shooting Colorado Springs, CO	5/9/21	WaPo	Yes	6	0	6	17 <sup>bl</sup>	-	1
10. FedEx warehouse shooting Indianapolis, IN	4/15/21	MJ/VP/WaPo	Yes	8	7	15	-	Yes	2 <sup>bm</sup>
11. Orange office complex shooting Orange, CA	3/31/21	MJ/VP/WaPo	-	4	1	5	-	-	1

**Exhibit B**  
**Public Mass Shootings Data**  
**1982 – Oct. 2022**

Case and Location	Date	Source	Large Capacity Mag.? <sup>a</sup>	Fatalities <sup>b</sup>	Injuries <sup>c</sup>	Total Fatalities & Injuries <sup>c</sup>	Shots Fired <sup>d</sup>	Gun(s) Obtained Legally? <sup>e</sup>	Offender(s) Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
12. Essex Royal Farms shooting Baltimore County, MD	3/28/21	WaPo	-	4	1	5	-	Yes <sup>bn</sup>	1
13. King Soopers supermarket shooting Boulder, CO	3/22/21	MJ/VP/WaPo	Yes	10	0	10	-	Yes	2
14. Atlanta massage parlor shootings Atlanta, GA	3/16/21	MJ/VP/WaPo	Yes	8	1	9	-	Yes <sup>bo</sup>	1
15. Hyde Park shooting Chicago, IL	1/9/21	WaPo	-	5	2	7	-	-	1
16. Englewood block party shooting Chicago, IL	7/4/20	WaPo	-	4	4	8	-	-	-
17. Springfield convenience store shooting Springfield, MO	3/15/20	MJ/VP/WaPo	-	4	2	6	-	Yes <sup>bp</sup>	2
18. Molson Coors shooting Milwaukee, WI	2/26/20	MJ/VP/WaPo	-	5	0	5	12 <sup>bq</sup>	-	2 <sup>br</sup>
19. Jersey City Kosher Supermarket Jersey City, NJ	12/10/19	MJ/VP/WaPo	-	4	3	7	-	Yes	5
20. Football-watching party Fresno, CA	11/17/19	WaPo	-	4	6	10	-	-	2
21. Halloween Party Orinda, CA	11/1/19	WaPo	-	5	0	5	-	-	1
22. Tequila KC bar Kansas City, KS	10/6/19	WaPo	-	4	5	9	-	No	2

**Exhibit B**  
**Public Mass Shootings Data**  
**1982 – Oct. 2022**

Case and Location	Date	Source	Large Capacity Mag.? <sup>a</sup>	Fatalities <sup>b</sup>	Injuries <sup>c</sup>	Total Fatalities & Injuries <sup>c</sup>	Shots Fired <sup>d</sup>	Gun(s) Obtained Legally? <sup>e</sup>	Offender(s) Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
23. Midland-Odessa Highways Odessa, TX	8/31/19	MJ/VP/WaPo	-	7	25	32	-	No	1
24. Dayton Dayton, OH	8/4/19	MJ/VP/WaPo	Yes	9	27	36	41 <sup>f</sup>	Yes	1/2
25. El Paso Walmart El Paso, TX	8/3/19	MJ/VP/WaPo	Yes	22	26	48	-	Yes	1
26. Casa Grande Senior Mobile Estates Santa Maria, CA	6/19/19	WaPo	-	4	0	4	-	-	1
27. Virginia Beach Municipal Center Virginia Beach, VA	5/31/19	MJ/VP/WaPo	Yes	12	4	16	-	Yes	2
28. Henry Pratt Co. Aurora, IL	2/15/19	MJ/VP/WaPo	-	5	6	11	-	No	1
29. SunTrust Bank Sebring, FL	1/23/19	MJ/VP/WaPo	-	5	0	5	-	Yes	1
30. Borderline Bar & Grill Thousand Oaks, CA	11/7/18	MJ/VP/WaPo	Yes	12	1	13	50 <sup>g</sup>	Yes	1
31. Tree of Life Synagogue Pittsburgh, PA	10/27/18	MJ/VP/WaPo	-	11	6	17	-	Yes	4
32. T&T Trucking Bakersfield, CA	9/12/18	MJ/VP/WaPo	No	5	0	5	-	-	1
33. Capital Gazette Annapolis, MD	6/28/18	MJ/VP/WaPo	-	5	2	7	-	Yes	1



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Case and Location	Date	Source	Large Capacity Mag.? <sup>a</sup>	Fatalities <sup>b</sup>	Injuries <sup>c</sup>	Total Fatalities & Injuries <sup>c</sup>	Shots Fired <sup>d</sup>	Gun(s) Obtained Legally? <sup>e</sup>	Offender(s)' Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
34. Santa Fe High School Santa Fe, TX	5/18/18	MJ/VP/WaPo	No	10	13	23	-	-	2
35. Waffle House Nashville, TN	4/22/18	MJ/VP/WaPo	-	4	4	8	-	Yes	1
36. Detroit Detroit, MI	2/26/18	VP	-	4	0	4	-	-	-
37. Stoneman Douglas HS Parkland, FL	2/14/18	CC/MJ/VP/WaPo	Yes	17	17	34	-	Yes	1
38. Pennsylvania Carwash Melcroft, PA	1/28/18	MJ/VP/WaPo	-	4	1	5	-	-	3 <sup>h</sup>
39. Rancho Tehama Rancho Tehama, CA	11/14/17	MJ/VP/WaPo	Yes	4	10	14	30 <sup>i</sup>	No	2
40. Texas First Baptist Church Sutherland Springs, TX	11/5/17	CC/MJ/VP/WaPo	Yes	26	20	46	450 <sup>j</sup>	Yes	1
41. Las Vegas Strip Las Vegas, NV	10/1/17	CC/MJ/VP/WaPo	Yes	58	422	480	1100 <sup>k</sup>	Yes	23
42. Taos and Rio Arriba counties Abiquiu, NM	6/15/17	WaPo	No	5	0	5	-	-	1
43. Fiamma Workplace Orlando, FL	6/5/17	CC/MJ/VP/WaPo	No	5	0	5	-	-	1
44. Marathon Savings Bank Rothschild, WI	3/22/17	VP/WaPo	-	4	0	4	-	-	2

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			Capacity			Fatalities &		Obtained	Number of
			Mag.? <sup>a</sup>			Injuries <sup>c</sup>	Fired <sup>d</sup>	Legally? <sup>e</sup>	Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45. Club 66 Yazoo City, MS	2/6/17	VP/WaPo	-	4	0	4	-	-	1
46. Fort Lauderdale Airport Fort Lauderdale, FL	1/6/17	CC/MJ/VP/WaPo	No	5	6	11	15 <sup>l</sup>	Yes	1
47. Cascade Mall Burlington, WA	9/23/16	CC/MJ/VP/WaPo	Yes	5	0	5	-	-	1
48. Dallas Police Dallas, TX	7/7/16	CC/MJ/VP/WaPo	Yes	5	11	16	-	Yes	3
49. Walgreens Parking Lot Las Vegas, NV	6/29/16	WaPo	-	4	0	4	-	-	1
50. Orlando Nightclub Orlando, FL	6/12/16	CC/MJ/VP/WaPo	Yes	49	53	102	110 <sup>m</sup>	Yes	2
51. Franklin Avenue Cookout Wilksburg, PA	3/9/16	VP/WaPo	Yes	6	3	9	48 <sup>n</sup>	No	2
52. Kalamazoo Kalamazoo County, MI	2/20/16	MJ/VP/WaPo	Yes	6	2	8	-	Yes	1
53. San Bernardino San Bernardino, CA	12/2/15	CC/MJ/VP/WaPo	Yes	14	22	36	150 <sup>o</sup>	Yes	4
54. Tennessee Colony campsite Anderson County, TX	11/15/15	VP/WaPo	-	6	0	6	-	-	1
55. Umpqua Community College Roseburg, OR	10/1/15	CC/MJ/VP/WaPo	-	9	9	18	-	Yes	6

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			Mag.? <sup>a</sup>			Fatalities & Injuries <sup>c</sup>		Obtained Legally? <sup>e</sup>	Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
56. Chattanooga Military Center Chattanooga, TN	7/16/15	CC/MJ/VP/WaPo	Yes	5	2	7	-	Yes	3
57. Charleston Church Charleston, SC	6/17/15	CC/MJ/VP/WaPo	Yes	9	3	12	-	Yes	1
58. Marysville High School Marysville, WA	10/24/14	CC/MJ/VP/WaPo	Yes	4	1	5	-	No	1
59. Isla Vista Santa Barbara, CA	5/23/14	MJ/VP/WaPo	No	6	13	19	50 <sup>p</sup>	Yes	3
60. Alturas Tribal Alturas, CA	2/20/14	MJ/VP/WaPo	-	4	2	6	-	-	2
61. Washington Navy Yard Washington, D.C.	9/16/13	CC/MJ/VP/WaPo	No	12	8	20	-	Yes	2
62. Hialeah Hialeah, FL	7/26/13	CC/MJ/VP/WaPo	Yes	6	0	6	10 <sup>q</sup>	Yes	1
63. Santa Monica Santa Monica, CA	6/7/13	CC/MJ/VP/WaPo	Yes	5	3	8	70 <sup>r</sup>	Yes	2
64. Federal Way Federal Way, WA	4/21/13	MJ/VP/WaPo	-	4	0	4	-	Yes	2
65. Upstate New York Herkimer County, NY	3/13/13	MJ/VP/WaPo	-	4	2	6	-	Yes	1
66. Newtown School Newtown, CT	12/14/12	CC/MJ/VP/WaPo	Yes	27	2	29	154	No	4/3

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			Mag.? <sup>a</sup>			Fatalities & Injuries <sup>c</sup>		Obtained Legally? <sup>e</sup>	Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
67. Accent Signage Systems Minneapolis, MN	9/27/12	CC/MJ/VP/WaPo	Yes	6	2	8	46	Yes	1
68. Sikh Temple Oak Creek, WI	8/5/12	CC/MJ/VP/WaPo	Yes	6	4	10	-	Yes	1
69. Aurora Movie Theater Aurora, CO	7/20/12	CC/MJ/VP/WaPo	Yes	12	70	82	80	Yes	4
70. Seattle Café Seattle, WA	5/30/12	CC/MJ/VP/WaPo	No	5	1	6	-	Yes	2
71. Oikos University Oakland, CA	4/2/12	CC/MJ/VP/WaPo	No	7	3	10	-	Yes	1
72. Su Jung Health Sauna Norcross, GA	2/22/12	MJ/WaPo	-	4	0	4	-	Yes	1
73. Seal Beach Seal Beach, CA	10/14/11	CC/MJ/VP/WaPo	No	8	1	9	-	Yes	3
74. IHOP Carson City, NV	9/6/11	CC/MJ/VP/WaPo	Yes	4	7	11	-	Yes	3
75. Akron Akron, OH	8/7/11	VP	No	7	2	9	21 <sup>s</sup>	-	-
76. Forum Roller World Grand Prairie, TX	7/23/11	WaPo	-	5	4	9	-	-	1
77. Grand Rapids Grand Rapids, MI	7/7/11	CC	Yes	7	2	9	10	-	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
78. Family law practice Yuma, AZ	6/2/11	WaPo	-	5	1	6	-	-	1
79. Tucson Tucson, AZ	1/8/11	CC/MJ/VP/WaPo	Yes	6	13	19	33	Yes	1
80. Jackson Jackson, KY	9/11/10	VP	No	5	0	5	12 <sup>t</sup>	-	-
81. City Grill Buffalo, NY	8/14/10	VP/WaPo	-	4	4	8	10 <sup>u</sup>	-	1
82. Hartford Beer Distributor Manchester, CT	8/3/10	CC/MJ/VP/WaPo	Yes	8	2	10	11	Yes	2
83. Yoyito Café Hialeah, FL	6/6/10	CC/VP/WaPo	No	4	3	7	9 <sup>v</sup>	-	-
84. Hot Spot Café Los Angeles, CA	4/3/10	VP/WaPo	-	4	2	6	50 <sup>w</sup>	-	1
85. Coffee Shop Police Parkland, WA	11/29/09	CC/MJ/VP/WaPo	No	4	0	4	-	No	2
86. Fort Hood Fort Hood, TX	11/5/09	CC/MJ/VP/WaPo	Yes	13	32	45	214	Yes	1
87. Worth Street Mount Airy, NC	11/1/09	VP/WaPo	-	4	0	4	16 <sup>x</sup>	No	1
88. Binghamton Binghamton, NY	4/3/09	CC/MJ/VP/WaPo	Yes	13	4	17	99	Yes	2

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			Mag.? <sup>a</sup>			Fatalities & Injuries <sup>c</sup>		Obtained Legally? <sup>e</sup>	Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
89. Carthage Nursing Home Carthage, NC	3/29/09	CC/MJ/VP/WaPo	No	8	2	10	-	Yes	2
90. Skagit County Alger, WA	9/2/08	VP/WaPo	-	6	4	10	-	No	2
91. Atlantis Plastics Henderson, KY	6/25/08	CC/MJ/VP/WaPo	No	5	1	6	-	Yes	1
92. Black Road Auto Santa Maria, CA	3/18/08	VP/WaPo	-	4	0	4	17 <sup>y</sup>	-	1
93. Northern Illinois University DeKalb, IL	2/14/08	CC/MJ/VP/WaPo	Yes	5	21	26	54	Yes	4
94. Kirkwood City Council Kirkwood, MO	2/7/08	CC/MJ/VP/WaPo	No	6	1	7	-	No	2
95. Youth With a Mission and New Life Church	12/9/07	VP/WaPo	Yes	4	5	9	25 <sup>z</sup>	-	3
96. Westroads Mall Omaha, NE	12/5/07	CC/MJ/VP/WaPo	Yes	8	5	13	14	No	1
97. Crandon Crandon, WI	10/7/07	CC/MJ/WaPo	Yes	6	1	7	30 <sup>aa</sup>	Yes	1
98. Virginia Tech Blacksburg, VA	4/16/07	CC/MJ/VP/WaPo	Yes	32	17	49	176	Yes	2
99. Trolley Square Salt Lake City, UT	2/12/07	CC/MJ/VP/WaPo	No	5	4	9	-	No	2

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
100. Amish School Lancaster County, PA	10/2/06	CC/MJ/VP/WaPo	No	5	5	10	-	Yes	3
101. The Ministry of Jesus Christ Baton Rouge, LA	5/21/06	VP/WaPo	-	5	1	6	-	-	1
102. Capitol Hill Seattle, WA	3/25/06	CC/MJ/VP/WaPo	Yes	6	2	8	-	Yes	4
103. Goleta Postal Goleta, CA	1/30/06	CC/MJ/VP/WaPo	Yes	7	0	7	-	Yes	1
104. Sash Assembly of God Sash, TX	8/29/05	VP/WaPo	-	4	0	4	-	-	2
105. Red Lake Red Lake, MN	3/21/05	CC/MJ/VP/WaPo	No	9	7	16	-	No	3
106. Living Church of God Brookfield, WI	3/12/05	CC/MJ/VP/WaPo	Yes	7	4	11	-	Yes	1
107. Fulton County Courthouse Atlanta, GA	3/11/05	VP/WaPo	-	4	0	4	-	No	1
108. Damageplan Show Columbus, OH	12/8/04	CC/MJ/VP/WaPo	No	4	3	7	15 <sup>ab</sup>	Yes	1
109. Hunting Camp Meteor, WI	11/21/04	CC/VP/WaPo	Yes	6	2	8	20	-	1
110. ConAgra Foods Plant Kansas City, KS	7/3/04	VP/WaPo	-	6	1	7	10 <sup>ac</sup>	-	2

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			Mag.? <sup>a</sup>			Fatalities & Injuries <sup>c</sup>		Obtained Legally? <sup>e</sup>	Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
111. Stateline Tavern Oldtown, ID	10/24/03	VP/WaPo	Yes	4	0	4	14 <sup>ad</sup>	-	1
112. Windy City Warehouse Chicago, IL	8/27/03	CC/VP/WaPo	No	6	0	6	-	-	-
113. Lockheed Martin Meridian, MS	7/8/03	CC/MJ/VP/WaPo	-	6	8	14	-	Yes	5
114. Labor Ready Huntsville, AL	2/25/03	VP/WaPo	-	4	1	5	-	-	1
115. Bertrand Products South Bend, IN	3/22/02	VP/WaPo	-	4	2	6	-	-	2
116. Burns International Security Sacramento, CA	9/10/01	VP/WaPo	Yes	5	2	7	200 <sup>ae</sup>	-	2
117. Bookcliff RV Park Rifle, CO	7/3/01	VP/WaPo	No	4	3	7	6 <sup>af</sup>	-	1
118. Navistar Melrose Park, IL	2/5/01	CC/MJ/VP/WaPo	Yes	4	4	8	-	Yes	4
119. Houston Houston, TX	1/9/01	VP	-	4	0	4	-	-	-
120. Wakefield Wakefield, MA	12/26/00	CC/MJ/VP/WaPo	Yes	7	0	7	37	Yes	3
121. Mount Lebanon Pittsburgh, PA	4/28/00	VP/WaPo	No	5	1	6	-	Yes	1



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			Capacity Mag.? <sup>a</sup>			Fatalities & Injuries <sup>c</sup>		Obtained Legally? <sup>e</sup>	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
122. Mi-T-Fine Car Wash Irving, TX	3/20/00	VP/WaPo	-	5	1	6	-	-	-
123. Hotel Tampa, FL	12/30/99	CC/MJ/VP/WaPo	No	5	3	8	-	Yes	2
124. Xerox Honolulu, HI	11/2/99	CC/MJ/VP/WaPo	Yes	7	0	7	28	Yes	1
125. Wedgwood Baptist Church Fort Worth, TX	9/15/99	CC/MJ/VP/WaPo	Yes	7	7	14	30	Yes	2
126. Atlanta Day Trading Atlanta, GA	7/29/99	MJ/VP/WaPo	-	9	13	22	-	Yes	4
127. Albertson's Supermarket Las Vegas, NV	6/3/99	VP/WaPo	-	4	1	5	-	-	1
128. Columbine High School Littleton, CO	4/20/99	CC/MJ/VP/WaPo	Yes	13	23	36	188	No	4
129. St. John Fellowship Baptist Church Gonzalez, LA	3/10/99	VP/WaPo	-	4	4	8	-	-	1
130. Thurston High School Springfield, OR	5/21/98	CC/MJ/VP/WaPo	Yes	4	25	29	50	No	3
131. Westside Middle School Jonesboro, AR	3/24/98	CC/MJ/VP/WaPo	Yes	5	10	15	26	No	9/10
132. Connecticut Lottery Newington, CT	3/6/98	CC/MJ/VP/WaPo	Yes	4	0	4	5	Yes	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
133. Caltrans Maintenance Yard Orange, CA	12/18/97	CC/MJ/VP/WaPo	Yes	4	2	6	144	Yes	1
134. Erie Manufacturing Bartow, FL	12/3/97	VP	-	4	0	4	12 <sup>ag</sup>	-	-
135. R.E. Phelon Company Aiken, SC	9/15/97	CC/MJ/VP/WaPo	No	4	3	7	-	No	1
136. News and Sentinel Colebrook, NH	8/20/97	VP/WaPo	-	4	4	8	-	-	2
137. Fire Station Jackson, MS	4/25/96	VP/WaPo	-	5	3	8	-	-	3
138. Fort Lauderdale Fort Lauderdale, FL	2/9/96	CC/MJ/VP/WaPo	No	5	1	6	14 <sup>ah</sup>	Yes	2
139. Little Chester Shoes New York, NY	12/19/95	VP/WaPo	Yes	5	3	8	-	-	1
140. Piper Technical Center Los Angeles, CA	7/19/95	CC/VP/WaPo	Yes	4	0	4	-	-	-
141. Walter Rossler Company Corpus Christi, TX	4/3/95	CC/MJ/VP/WaPo	No	5	0	5	-	Yes	2
142. Puppy creek Hoke County, NC	12/31/94	VP	-	5	1	6	-	-	-
143. Air Force Base Fairchild Base, WA	6/20/94	CC/MJ/VP/WaPo	Yes	4	23	27	50 <sup>ai</sup>	Yes	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
144. Chuck E. Cheese Aurora, CO	12/14/93	CC/MJ/VP/WaPo	No	4	1	5	-	-	1
145. Long Island Railroad Garden City, NY	12/7/93	CC/MJ/VP/WaPo	Yes	6	19	25	30	Yes	1
146. Unemployment Office Oxnard, CA	12/2/93	VP/WaPo	-	4	4	8	-	-	-
147. Family Fitness Club El Cajon, CA	10/14/93	VP/WaPo	-	4	0	4	-	Yes	1
148. Luigi's Restaurant Fayetteville, NC	8/6/93	CC/MJ/VP/WaPo	No	4	8	12	-	Yes	3
149. Washington County Bar Jackson, MS	7/8/93	WaPo	-	5	0	5	-	-	1
150. 101 California Street San Francisco, CA	7/1/93	CC/MJ/VP/WaPo	Yes	8	6	14	75	No	3
151. Card club Paso Robles, CA	11/8/92	VP/WaPo	-	6	1	7	-	-	1
152. Watkins Glen Watkins Glen, NY	10/15/92	CC/MJ/VP/WaPo	No	4	0	4	-	Yes	1
153. Lindhurst High School Olivehurst, CA	5/1/92	CC/MJ/VP/WaPo	No	4	10	14	-	Yes	2
154. Phoenix Phoenix, AZ	3/15/92	VP	-	4	0	4	-	-	-

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
155. Royal Oak Postal Royal Oak, MI	11/14/91	CC/MJ/VP/WaPo	Yes	4	4	8	-	Yes	1
156. Restaurant Harrodsburg, KY	11/10/91	VP/WaPo	No	4	0	4	6 <sup>aj</sup>	No	1
157. University of Iowa Iowa City, IA	11/1/91	CC/MJ/VP/WaPo	No	5	1	6	-	Yes	1
158. Luby's Cafeteria Killeen, TX	10/16/91	CC/MJ/VP/WaPo	Yes	23	20	43	100	Yes	2
159. Post office Ridgewood, NJ	10/10/91	VP/WaPo	Yes	4	0	4	-	-	2
160. GMAC Jacksonville, FL	6/18/90	CC/MJ/VP/WaPo	Yes	9	4	13	14	Yes	2
161. Standard Gravure Corporation Louisville, KY	9/14/89	CC/MJ/VP/WaPo	Yes	8	12	20	21	Yes	5
162. Stockton Schoolyard Stockton, CA	1/17/89	CC/MJ/VP/WaPo	Yes	5	29	34	106	Yes	2
163. Montefiore School Chicago, IL	9/22/88	VP/WaPo	No	4	2	6	-	-	1
164. Old Salisbury Road Winston-Salem, NC	7/17/88	VP/WaPo	-	4	5	9	-	-	1
165. ESL Sunnyvale, CA	2/16/88	CC/MJ/VP/WaPo	No	7	4	11	-	Yes	7

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			Mag.? <sup>a</sup>			Fatalities & Injuries <sup>c</sup>		Obtained Legally? <sup>e</sup>	Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
166. Shopping Centers Palm Bay, FL	4/23/87	CC/MJ/VP/WaPo	Yes	6	14	20	40 <sup>ak</sup>	Yes	3
167. United States Postal Service Edmond, OK	8/20/86	CC/MJ/VP/WaPo	No	14	6	20	-	Yes	3
168. Anchor Glass Container Corporation South Connellsville, PA	3/16/85	VP/WaPo	No	4	1	5	-	-	1
169. Other Place Lounge Hot Springs, AR	7/24/84	VP/WaPo	No	4	1	5	-	-	1
170. San Ysidro McDonald's San Ysidro, CA	7/18/84	CC/MJ/VP/WaPo	Yes	21	19	40	257	Yes	3
171. Dallas Nightclub Dallas, TX	6/29/84	CC/MJ/VP/WaPo	Yes	6	1	7	-	No	1
172. Alaska Mining Town Manley Hot Springs, AK	5/17/84	VP/WaPo	No	7	0	7	-	-	1
173. College Station Collge Station, TX	10/11/83	VP	-	6	0	6	-	-	-
174. Alaska Back-County McCarthy, AK	3/1/83	VP/WaPo	-	6	2	8	-	-	2
175. Upper West Side Hotel New York, NY	2/3/83	VP	No	4	1	5	-	-	1
176. The Investor Noyes Island, AK	9/6/82	WaPo	-	8	0	8	-	-	1

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**Public Mass Shootings Data**  
**1982 – Oct. 2022**

Case and Location	Date	Source	Large Capacity Mag.? <sup>a</sup>	Fatalities <sup>b</sup>	Injuries <sup>c</sup>	Total Fatalities & Injuries <sup>c</sup>	Shots Fired <sup>d</sup>	Gun(s) Obtained Legally? <sup>e</sup>	Offender(s)' Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
177. Welding Shop Miami, FL	8/20/82	MJ/VP/WaPo	No	8	3	11	-	Yes	1
178. Western Transfer Co. Grand Prairie, TX	8/9/82	VP/WaPo	-	6	4	10	-	-	3
179. Russian Jack Springs Park Anchorage, AK	5/3/82	VP/WaPo	-	4	0	4	-	No	1
<b>Large-Capacity Magazine Average:</b>					<b>10</b>	<b>16</b>	<b>25</b>	<b>99</b>	
<b>Non-Large-Capacity Magazine Average:</b>					<b>6</b>	<b>3</b>	<b>9</b>	<b>16</b>	

**Notes and Sources:**

Public Mass Shootings from Mother Jones ("US Mass Shootings, 1982-2022: Data from Mother Jones' Investigation," updated October 14, 2022). MJ indicates a mass shooting identified by Mother Jones.

The Citizens Crime Commission of New York City ("Mayhem Multiplied: Mass Shooters and Assault Weapons," February 2018 update, and "Citizens Crime Commission of New York City, Mass Shooting Incidents in America (1984-2012)," accessed June 1, 2017). CC indicates a mass shooting identified by Citizens Crime Commission of New York City data.

The Washington Post ("The Terrible Numbers That Grow With Each Mass Shooting," updated May 12, 2021). WaPo indicates a mass shooting identified by The Washington Post.

The Violence Project ("Mass Shooter Database," updated May 14, 2022). VP indicates a mass shooting identified by the Violence Project.

<sup>a</sup> Large capacity magazines are those with a capacity to hold more than 10 rounds of ammunition. Stories from Factiva and Google searches reviewed to determine

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

whether an LCM was involved.

<sup>b</sup> Offender(s) are not included in counts of fatalities and injuries. Stories from Factiva and Google searches reviewed to determine number of fatalities and injuries.

<sup>c</sup> Offender(s) are not included in counts of fatalities and injuries. Stories from Factiva and Google searches reviewed to determine number of fatalities and injuries.

<sup>d</sup> Except where noted, all data on shots fired obtained from CC.

<sup>e</sup> The determination of whether guns were obtained legally is based on Mother Jones and The Washington Post reporting.

<sup>ba</sup> "This is the norm in our country': Highland Park Mayor speaks to Senate committee about gun violence," *CBS Chicago*, July 20, 2022.

<sup>bb</sup> MJ reported "fewer than 10" injuries for this incident.

<sup>bc</sup> "Update: Man among those killed held door to allow others to escape, Tulsa police chief says," *TulsaWorld*, June 2, 2022.

<sup>bd</sup> "The gunman in Uvalde carried more ammunition into Robb Elementary School than a U.S. soldier carries into combat," *CBS News*, May 27, 2022. Note the number of shots fired has been updated since Allen 2022 in Duncan v. Rob Bonta which listed 315 shots fired based on the number of rounds found at the school.

<sup>be</sup> "Uvalde gunman legally bought AR rifles days before shooting, law enforcement says," *The Texas Tribune*, May 25, 2022.

<sup>bf</sup> "Buffalo shooting suspect says his motive was to prevent 'eliminating the white race'," *NPR*, June 16, 2022.

<sup>bg</sup> "Sacramento Church Mass Shooting Follows Disturbing Trend of Domestic Violence, Mass Shooting Connection; Rise of Ghost Guns," *Everytown*, March 7, 2022.

<sup>bh</sup> "Oxford High School shooter fired 30 rounds, had 18 more when arrested, sheriff says," *Fox2Detroit*, December 1, 2021.

<sup>bi</sup> "Father of suspected Oxford High School shooter bought gun 4 days before shooting," *Fox 2 Detroit*, December 1, 2021.

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

<sup>bj</sup> "VTA shooter fired 39 rounds during attack; carried 32 high-capacity magazines," *KTVU Fox 2*, May 27, 2021.

<sup>bk</sup> "Sam Cassidy legally owned guns used in San Jose VTA shooting: Sheriff," *Kron4*, May 28, 2021.

<sup>bl</sup> "Colorado Springs shooter who killed 6 at party had "displayed power and control issues," police say," *The Denver Post*, May 11, 2021.

<sup>bm</sup> "Indianapolis FedEx Shooter Who Killed 4 Sikhs Was Not Racially Motivated, Police Say," *NPR*, July 28, 2021.

<sup>bn</sup> "Police Investigate Three Separate Fatal Shooting Incidents In Baltimore County," *Baltimore County Government Website*, March 29, 2021.

<sup>bo</sup> "Atlanta Shooting Suspect Bought Gun on Day of Rampage," *Courthouse News*, March 26, 2021.

<sup>bp</sup> "Search warrant reveals new information in Springfield Kum & Go shooting," *Springfield News-Leader*, April 8, 2020.

<sup>bq</sup> "'There was no warning this was going to happen,' Miller shooting witnesses told investigators," *WISN 12 News*, November 24, 2020.

<sup>br</sup> "Milwaukee Miller brewery shooting: Six Molson Coors workers, including shooter, dead in rampage," *Milwaukee Journal Sentinel*, February 26, 2020.

<sup>f</sup> "The Dayton gunman killed 9 people by firing 41 shots in 30 seconds. A high-capacity rifle helped enable that speed," *CNN*, August 5, 2019.

<sup>g</sup> "Authorities Describe 'Confusion And Chaos' At Borderline Bar Shooting In California," *NPR*, November 28, 2018.

<sup>h</sup> "Suspect in quadruple killing at car wash dies," *CNN*, January 30, 2018.

<sup>i</sup> "California gunman fired 30 rounds at elementary school, left when he couldn't get inside," *ABC News*, November 15, 2017.

<sup>j</sup> "'Be quiet! It's him!' Survivors say shooter walked pew by pew looking for people to shoot," *CNN*, November 9, 2017.



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<sup>k</sup> "Sheriff Says More than 1,100 Rounds Fired in Las Vegas," *Las Vegas Review Journal*, November 22, 2017

<sup>l</sup> "Fort Lauderdale Shooting Suspect Appears in Court, Ordered Held Without Bond," *Washington Post*, January 9, 2017.

<sup>m</sup> "'We Thought It Was Part of the Music': How the Pulse Nightclub Massacre Unfolded in Orlando," *The Telegraph*, June 13, 2016.

<sup>n</sup> "Two men charged with homicide in connection with Wilksburg backyard ambush," *Pittsburgh's Action News*, June 24, 2016.

<sup>o</sup> "San Bernardino Suspects Left Trail of Clues, but No Clear Motive," *New York Times*, December 3, 2015.

<sup>p</sup> "Sheriff: Elliot Rodger Fired 50-plus Times in Isle Vista Rampage," *Los Angeles Times*, June 4, 2014.

<sup>q</sup> "Shooter Set \$10,000 on Fire in Hialeah Shooting Rampage," *NBC News*, July 28, 2013.

<sup>r</sup> "Police Call Santa Monica Gunman 'Ready for Battle,'" *New York Times*, June 8, 2013.

<sup>s</sup> "Questions linger in slayings; investigation continues in rampage as community searches for answers on why gunman shot eight people," *The Beacon Journal*, August 14, 2011.

<sup>t</sup> "Kentucky Tragedy: Man Kills Wife, Five Others, in Rampage Over Cold Eggs, Say Cops," *CBS News*, September 13, 2010.

<sup>u</sup> "Ex-gang member guilty of shooting 5 in deadly 17-second rampage," *NBC*, April 1, 2011.

<sup>v</sup> "Hialeah Gunman's Rage Over Estranged Wife Leaved 5 Dead," *Sun-Sentinel*, June 7, 2010.

<sup>w</sup> "Man convicted of killing 4 at Los Angeles restaurant," *Associated Press*, March 15, 2016.

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

<sup>x</sup> "4 Victims In Mount Airy Shooting Related, Police Say," *WXII 12 News*, November 2, 2009.

<sup>y</sup> "Arrested suspect might have warned of Santa Maria shooting", *Associated Press*, March 20, 2008.

<sup>z</sup> "Profile: New information released on Matthew Murray, gunman in church-related shootings in Colorado; Larry Bourbannais, wounded in one of the shootings, discusses his experience," *NBC News*, December 11, 2007.

<sup>aa</sup> "Small Town Grieves for 6, and the Killer," *Los Angeles Times*, October 9, 2007.

<sup>ab</sup> "National Briefing | Midwest: Ohio: Shooter At Club May Have Reloaded," *New York Times*, January 15, 2005.

<sup>ac</sup> "Sixth person dies of injuries from shooting at Kansas meatpacking plant," *Associated Press*, July 3, 2004.

<sup>ad</sup> "Four Killed In Oldtown Shooting," *The Miner*, October 30, 2003.

<sup>ae</sup> "Sacramento shooter unscathed before killing self, autopsy shows," *Associated Press*, September 14, 2001.

<sup>af</sup> "Gunman kills 3, wounds 4 in Rifle rampage; mental patient is arrested," *The Denver Post*, April 2, 2015.

<sup>ag</sup> "Unfinished business," *Dateline NBC*, December 21, 2006.

<sup>ah</sup> "5 Beach Workers in Florida are Slain by Ex-Colleague," *New York Times*, February 10, 1996.

<sup>ai</sup> "Man Bent On Revenge Kills 4, Hurts 23 -- Psychiatrist Is First Slain In Rampage At Fairchild Air Force Base," *The Seattle Times*, June 21, 1994.

<sup>aj</sup> "Man Killed Estranged Wife, Three Others as They Drove to Dinner," *Associated Press*, November 11, 1991.

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			Capacity Mag.? <sup>a</sup>			Fatalities & Injuries <sup>c</sup>		Obtained Legally? <sup>e</sup>	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

<sup>ak</sup> "6 Dead in Florida Sniper Siege; Police Seize Suspect in Massacre," *Chicago Tribune*, April 25, 1987.